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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,932	03/26/2004	Reinhard Bruch	35690-501	6430

64046 7590 11/14/2007
MINTZ, LEVIN, COHN, FERRIS, GLOVSKY AND POPEO, P.C
LA JOLLA CENTRE II
9255 TOWNE CENTRE DRIVE, SUITE 600
SAN DIEGO, CA 92121-3039

EXAMINER

HELLNER, MARK

ART UNIT	PAPER NUMBER
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3663

MAIL DATE	DELIVERY MODE
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11/14/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/809,932

Applicant(s)

BRUCH ET AL.

Examiner

Mark Hellner

Art Unit

3663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-17 and 19-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,4-11,23 and 25-27 is/are allowed.
- 6) ☒ Claim(s) 12-17, 19-22 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chin (7,184,143).

Chin discloses a method and apparatus comprising: means (10 hz 42 fs laser pulse source) for providing femtosecond terawatt laser radiation configured to emit the radiation through a channel to generate a plasma; means (PMT) for capturing light backscattered from the sampler by a photomultiplier; and means (oscilloscope) for analyzing the spectral signatures of the sample to determine its constituents a spectrometer being part of the oscilloscope.

The difference between claim 24 and Chin is the use of at least 2 photomultipliers and 2 spectrometers.

This difference would have been obvious when seeking to examine more than one wavelength range.

Claims 12-17 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chin in view of Patzwald and Mourou et al (RE37,585).

Chin discloses a device comprising: a femtosecond terawatt laser radiation source (column 3, lines 22-31) configured to emit laser radiation through a sample; an

optical unit (M2 and M3) configured to receive light backscattered from the sample; and
a detection and analysis unit (PMT and Oscilloscope).

The difference between claim 12 and Chin is that the laser source operate at 237
nm.

Patzwald et al is cited to show that the detection range for spectrometers is
between 200 nm and 2400 nm.

It is also noted that the broad teaching of Chin is that using a laser to create a
plasma filament (breakdown) in an air sample is useful to detect pollutants.

Claim 11 of Mourou et al teaches that is was known at the time of the present
application to use a laser source in the range of 200 nm to 2 microns in order to induce
breakdown.

A disclosure of structure capable of producing pulses at 200 nm is disclosed by
column 6, lines 30 to 37.

It would have been obvious for a person of ordinary skill in the art to use the
method of Chin to investigate any wavelength in the range from 200 to 2400 nm in view
of the fact that structure for producing and detecting within these ranges was readily
available.

The reason to do so would have been the possibility that pollutants are only
detectable at unique wavelengths.

Claim 13 is taught by the title of Chin.

Claim 14 is taught by column 3, lines 25 to 27 of Chin.

The subject matter of claims 15 and 16 would have been operational parameters derivable from the pulse characteristics set forth by column 3, line 27 to 31 of Chin.

Claim 17 is taught by column 3, line 29 of Chin.

Claim 19 is taught by column 2, line 60 of Chin.

Claim 20 is taught by column 3, lines 5 to 7 of Chin.

Claim 21 is taught by the signal analysis method of the disclosure of Chin.

Claim 22 is taught by the combination of Chin, Patzwald and Mourou et al applied to claim 12.

Response to Arguments

Applicant's arguments, see amendment, filed 08/30/2007, with respect to claims 1, 2, 4-11, 23 and 25-27 have been fully considered and are persuasive. The rejection of these claims has been withdrawn.

Applicant's arguments with respect to claims 12-17, 19-22 and 24 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

Claims 1, 2, 4-11, 23 and 25-27 are allowed.

Any inquiry concerning this communication should be directed to Mark Hellner at telephone number 571 272 6981.

Mark Hellner

Primary Examiner

AU 3663

Mark Hellner